

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference MEW1776E	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/JP2004/005823	International filing date (day/month/year) 22/04/2004	(Earliest) Priority Date (day/month/year) 21/11/2003
Applicant MATSUSHITA ELECTRIC WORKS LTD.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 5 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☐ **Unity of invention is lacking** (see Box III).

4. With regard to the title,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

DISCHARGE LAMP BALLAST WITH DETECTION OF ABNORMAL DISCHARGE OUTSIDE THE ARC TUBE

5. With regard to the abstract,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regards to the drawings,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 1

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

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Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

A discharge lamp ballast is designed to limit or interrupt its AC output power to the discharge lamp upon occurrence of an abnormal discharge outside of an arc tube. A detector is included to examine a lamp voltage once in each of the positive and negative half-cycles or in each one complete cycle of the AC output power and to identify the abnormal discharge when there is a particular change in the monitored lamp voltage. The particular change may be defined by a single logic or by combination of several logics each designed to represent specific characteristic for the abnormal discharges of several types.

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H05B41/292

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H05B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 828 177 A (ODA GOICHI ET AL) 27 October 1998 (1998-10-27)	1,2
Y	column 3, line 15 - column 4, line 39; figures 1,10-12,14 column 8, line 12 - column 10, line 20 column 11, line 59 - column 12, line 67 -----	3,4,7,8, 10
Y	EP 1 185 149 A (MITSUBISHI ELECTRIC CORP) 6 March 2002 (2002-03-06) abstract; figures 1-3,5-8 paragraph '0011! - paragraph '0041! paragraph '0054! -----	3,10
Y	US 6 002 215 A (TODA ATSUSHI ET AL) 14 December 1999 (1999-12-14) column 3, line 35 - column 6, line 38; figures 1-4 ----- -/--	4,7,8



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

1 September 2004

Date of mailing of the international search report

04/10/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Ferla, M

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2002/101183 A1 (BENS PETRUS WILHELMUS FRANSISC ET AL) 1 August 2002 (2002-08-01) paragraph '0009! - paragraph '0014! paragraph '0023! - paragraph '0030!; figures 1-4 -----	7,8

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP2004/005823

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5828177	A	27-10-1998	JP 3207104 B2 JP 9223587 A DE 19705776 A1	10-09-2001 26-08-1997 30-10-1997
EP 1185149	A	06-03-2002	EP 1185149 A1 US 6452345 B1 WO 0120952 A1	06-03-2002 17-09-2002 22-03-2001
US 6002215	A	14-12-1999	JP 3207134 B2 JP 10321389 A DE 19821921 A1	10-09-2001 04-12-1998 26-11-1998
US 2002101183	A1	01-08-2002	CN 1389087 T WO 0215648 A1 EP 1312246 A1 JP 2004506306 T TW 512376 B	01-01-2003 21-02-2002 21-05-2003 26-02-2004 01-12-2002